Neglected Tropical Diseases

Preventive Chemotherapy and Transmission control

Soil-transmitted helminthiasis

Onchocerciasis

Lymphatic filariasis

Schistosomiasis

Guinea-worm disease

World Health Organization

NEGLECTED TROPICAL DISEASES, the communicable diseases of the neglected population

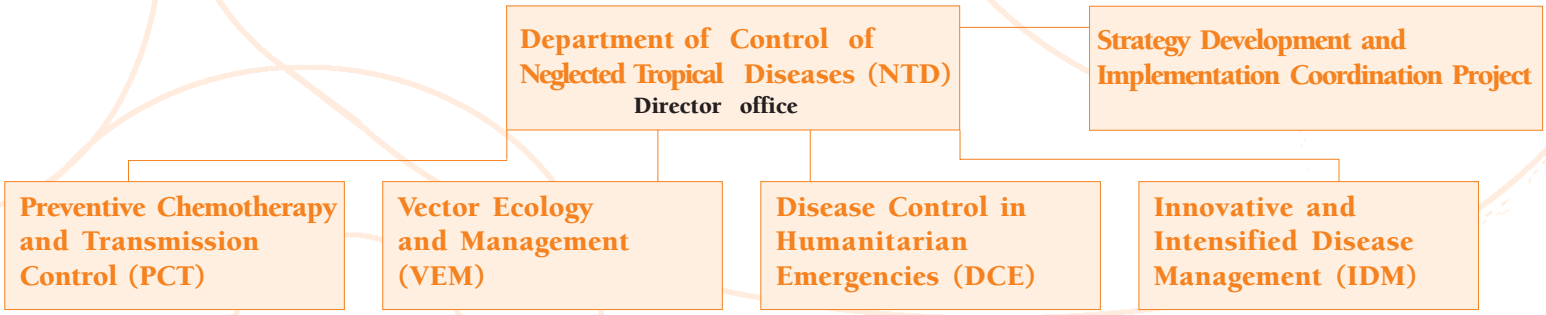
- 1 billion people infected, 2 billion people at-risk in tropical and subtropical countries
- Those most affected are the poorest, often living in remote rural areas or urban slums
- The diseases flourish best under conditions linked to poverty – unsafe water, poor sanitation, substandard housing, reservoirs for insects and other disease vectors
- Children are disproportionately affected and can live with the consequences their whole life long
- The consequences: severe physical pain, irreversible disability, gross disfigurement and, in some cases, death
- Social stigmatization and discrimination compound these consequences
- 100% of low-income countries are affected simultaneously by more than 5 diseases

WHO approaches to combat neglected tropical diseases

- Assessment of the burden of neglected tropical diseases
- Integrated approach and multi-interventions package for disease control
- Strenghtening health care system and capacity building
- Evidence for advocacy
- Ensuring timely free access to high-quality drugs and preventive and diagnostic tools
- Access to innovation
- Strengthening integrated vector management
- Partnership and resource mobilization
- Promoting an inter-sectoral and inter-programmatic approach

Department of Control of Neglected Tropical Diseases

WHO has developed a conceptual framework for control that moves from a purely disease centered approach to an integrated one, with neglected tropical diseases grouped together based on similar intervention startegies. The structure of the new department of Control of Neglected Tropical Diseases (NTD) follows this framework:



PREVENTIVE CHEMOTHERAPY IS

large-scale use of safe, single dose drugs for controlling some widespread neglected tropical diseases such as lymphatic filariasis, onchocerciasis, schistosomiasis and soil-transmitted helminthiasis.

All of these diseases are caused by parasitic worms and all remain silent for a long time after infection is acquired, usually in childhood.

Lymphatic filariasis

Over 120 million people are currently infected and around 1.3 billion people in more than 80 countries are at risk of infection. Damage to the lymphatic system, kidneys, arms, legs or (especially in men) genitals causes significant pain, lost productivity on a huge scale, and discrimination.

Onchocerciasis

More than 100 million people are at risk of infection and some 37 million people are estimated to be infected. Onchocerciasis, or river blindness, causes severe visual impairment, including permanent blindness, and can shorten the life expectancy of its victims by up to 15 years. Skin lesions – itching, nodules, dermatitis, depigmentation – are another devastating consequence. Over 99% of those affected live in Africa.

Schistosomiasis and soil-transmitted helminthiasis

300 million people are severely ill with schistosomes and soil-transmitted helminths. Of these, at least 50% are school-age children, in the age range of 6 to 15 years. Worm infections aggravate malnutrition and amplify rates of anaemia. A child who has suffered persistent and heavy infections is likely to have chronic irreversible diseases, such as liver fibrosis, cancer of the bladder or kidney failure, later in life. An estimated 70 million people with urinary schistosomiasis in Africa currently suffer from bloody urine indicating damage of the bladder and urinary tract.

LOW-COST TOOLS, HIGH PAYOFFS

For all of these parasitic diseases, donated or inexpensive drugs are available for effective prevention and control. These drugs, when used in preventive chemotherapy, have the power to eliminate the burden caused by these ancient scourges of humanity. The low cost is a compelling motivation: the protection of one person against several parasitic diseases requires an investment of less than US$ 0.50 per year.

The striking features of preventive chemotherapy are:

- No costs for diagnosis
- Inexpensive, simple, safe dose of broad-spectrum anthelminthic drugs
- Easy to implement
- Pro-poor and non-discriminatory
- Rapid impact and spectacular results, particularly for infants and schoolchildren

The cost of treatment per person is inexpensive. However, setting up a comprehensive control programme to cover the large number of people at-risk is a financial challenge for many of the low- and lower middle-income countries where these diseases flourish.

US$ 0.50 all inclusive

Drugs
+ Delivery
+ Equipment
+ Health education materials
+ Training for implementing personnel and
+ Monitoring and evaluation

Circa US$ 0.50 per person per year

Whipworms

and many others

Hookworm

COORDINATED, BEST USE OF DEWORMING DRUGS

A package of just a few anthelminthic drugs – albendazole or/and mebendazole, praziquantel, ivermectin or diethylcarbamazine – is able to bring relief for over 15 types of helminthic and parasitic infections.

Preventive chemotherapy considers how best to use the available drugs for the control of helminthiasis in general rather than concentrating on specific forms of helminthiasis.

Schistosomes

***3** drugs alone and in combination can defeat more than **15** types of helminthic and parasitic infections all at once*

Drugs	Availability of drugs
Albendazole	Donated by GlaxoSmithKline for Global Programme to Eliminate Lymphatic Filariasis (GPELF)
Diethylcarbamazine	Non donated
Ivermectin	Donated by Merck & Co., Inc for GPELF and onchocerciasis control programmes
Mebendazole	Donated by Johnson and Johnson Pharmaceutical for soil-transmitted helminths control programmes for children
Praziquantel	Non donated

Some of these drugs are donated on a large scale by the pharmaceutical industries and therefore widely accessible.

DELIVERY OF DRUG PACKAGES

Back to schools and local communities

The deworming programme can be carried out by schoolteachers. Using the school system for distribution, the total cost of treating a child is also less than US$ 0.50 per year. Alongside school teachers, community-based drug distributors can play a crucial role to reach children who are not in school in addition to communities at risk.

Shared delivery, doubled benefit

Systems created to deliver one intervention can be used to deliver others. There are numerous opportunities for co-delivery of drug packages with interventions being delivered by other large-scale initiatives.
Sharing delivery system means saving money on distribution costs. More importantly, this approach brings all necessary treatments at the same time to neglected populations, who nearly always suffer from several overlapping diseases – all linked to poverty. Cost-effectiveness of packaged interventions increases exponentially.

Vaccination
Polio eradication programme
Vitamin A distribution campaigns
Bednet distribution campaigns against malaria
International Trachoma Initiatives
School health and feeding programme
Community-directed treatment interventions
and many other interventions ...

+ Preventive chemotherapy

Protect neglected populations from parasitic diseases through

1. ***making a package of anthelminthic drugs***
2. ***delivering treatments with other interventions***
3. ***using the same health service infrastructure***

SCALING UP TO REACH THE UN-REACHED

Global targets for preventive chemotherapy

1. To eliminate **lymphatic filariasis** as a public health problem in all endemic countries by 2020

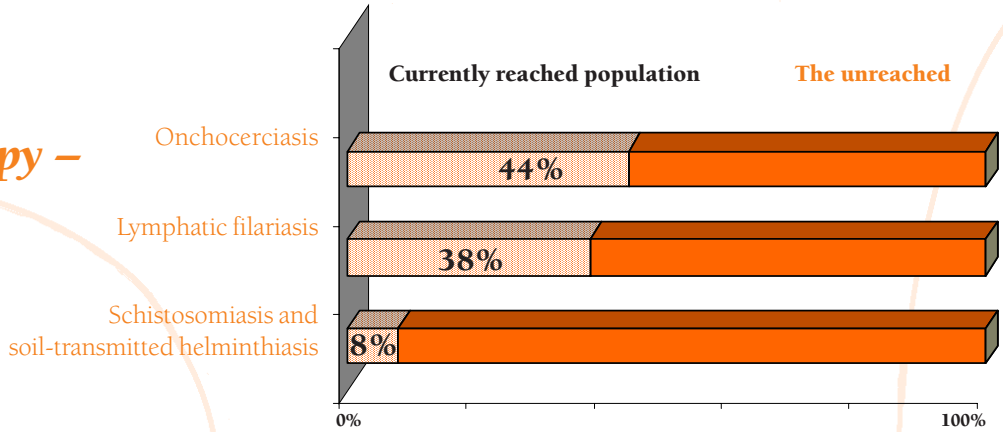
2. To regularly treat at least 75% of all school-age children at risk of morbidity due to **schistosomiasis** and **soil-transmitted helminth** infections by the year 2010

3. To reach 90 million treatments per year against **onchocerciasis** in APOC countries from 2010 onward

Achievements so far

- Dramatic increase of mass drug administration coverage against lymphatic filariasis: **381 million people** were treated in 2005 compared to 3 million in 2000.
- In 2005 **more than 65 million children** were treated for soil-transmitted helminthiasis
- **40 million people** were treated for onchocerciasis in 2005

Preventive chemotherapy – still far from the global target



BRIDGING GAPS

Access to non-donated drugs

Lack of access to non-donated anthelminthic drugs is a potential bottleneck in the scaling up of preventive chemotherapy.

Success in expanding regular coverage with anthelminthic drugs therefore rests on

- sufficient quantities of quality praziquantel and diethylcarbamazine
- affordability of non-donated drugs through preferential prices or generic drug production

Rescue children from worms

Following the same principle as childhood vaccination, populations at-risk must be protected against a set of common tropical diseases through a schedule of systematic treatments that start early in life and continue into adult age.

The number of children at high risk of infection is enormous. The impact of failing to protect these children is equally enormous: physical pain, curtailed education, life-long deformity, irreversible chronic disease, lost productivity – consequences that are passed on from generation to the next, anchoring large populations in poverty. In view of the widespread risk and its severe consequences, providing drugs free-of-charge is a moral obligation. With safe and inexpensive drugs now immediately available, the neglect is inexcusable.

Universal coverage through country-tailored preventive chemotherapy

As the number of affected people is so large and populations are often hard to reach, innovative ways to expand coverage must be found.

Strategies and opportunities for expanding coverage rates for preventive chemotherapy are likely to vary according to continent, country or locality. WHO is therefore supporting country efforts to

- Identify optimal drug delivery strategies in different regional and local contexts
- Include preventive chemotherapy in basic public health packages
- Adhere to a multi-disease approach
- Allot earmarked budget for school deworming programmes
- Promote regular preventive chemotherapy through national campaigns

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Pro-poor and pro-active interventions against neglected tropical diseases contribute to achievements of

Millennium Development Goals (MDG)

Goal 1. Eradicate extreme poverty and hunger
Goal 2. Achieve universal primary education
Goal 3. Promote gender equality and empower women
Goal 4. Reduce child mortality
Goal 5. Reduce maternal mortality
Goal 6. Combat HIV/AIDS/Malaria and other diseases
Goal 7. Ensure environmental sustainability
Goal 8. Develop a global partnership for development

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